SONY

bloggie™

Handbook
Mobile HD Snap Camera

MHS-TS55

© 2012 Sony Corporation

4-412-628-**11**(2)

US

How to use this handbook

Click on a button on the right to jump to the corresponding page.
This is convenient when searching for a function you want to view.

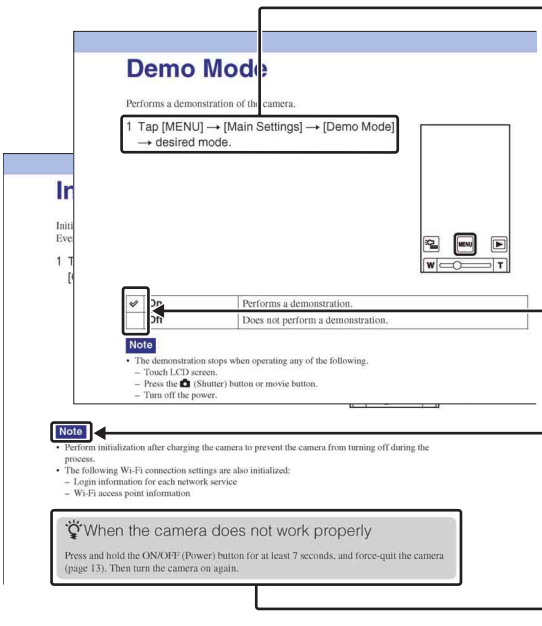
Search for information by function.

Search for information by operation.

Search for information in a listing of Settings items.

Search for information by keyword.

Marks and notations used in this handbook


Demo Mode
Performs a demonstration of the camera.
1 Tap [MENU] → [Main Settings] → [Demo Mode] → desired mode.
Performs a demonstration.
Does not perform a demonstration.
Note
• The demonstration stops when operating any of the following.
– Touch LCD screen.
– Press the (Shutter) button or movie button.
– Turn off the power.
Note
• Perform initialization after charging the camera to prevent the camera from turning off during the process.
• The following Wi-Fi connection settings are also initialized:
– Login information for each network service
– Wi-Fi access point information
When the camera does not work properly
Press and hold the ON/OFF (Power) button for at least 7 seconds, and force-quit the camera (page 13). Then turn the camera on again.

In this handbook, the sequence of operations is shown by arrows (→). Operate the camera in the order indicated. Marks are shown as they appear in the camera's default setting.

The default setting is indicated by ✓.

Indicates cautions and limitations relevant to the correct operation of the camera.

Indicates information that is useful to know.

Notes on using the camera

Language displayed on the LCD screen

This camera supports English language display only.

Internal memory back up

Be sure to make a backup copy to protect your data.

Notes on recording/playback and connection

- Before you start recording, make a trial recording to make sure that the camera is working correctly.
- The camera is neither dust-proof, nor splash-proof, nor water-proof. Read “Precautions” (page 70) before operating the camera.
- Avoid exposing the camera to water. If water enters inside the camera, a malfunction may occur. In some cases, the camera cannot be repaired.
- Do not aim the camera at the sun or other bright light.
- Do not use the camera near a location that generates strong radio waves or emits radiation. Otherwise, the camera may not properly record or play back images.
- Using the camera in sandy or dusty locations may cause malfunctions.
- If moisture condensation occurs, remove it before using the camera (page 70).
- Do not shake or strike the camera. It may cause a malfunction and you may not be able to record images. Furthermore, the recording media may become unusable or image data may be damaged.
- When connecting your camera to another device with a cable, be sure to insert the connector plug in the correct way. Pushing the plug forcibly into the terminal will damage the terminal and may result in a malfunction of your camera.
- Playback of movies other than those shot, edited or composed on this camera is not guaranteed.

On camera’s temperature

The camera may get warm due to continuous use, but it is not a malfunction.

On the overheat protection

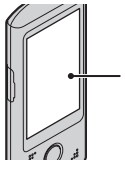
Depending on the camera and battery temperature, you may be unable to record movies or the power may turn off automatically to protect the camera. A message will be displayed on the LCD screen before the power turns off or you can no longer record movies.

Notes on the battery pack

- The battery pack is built into the camera. Charge the camera before using for the first time.
- You can charge the battery pack even if it is not completely discharged. In addition, even if the battery pack is not fully charged, you can use the partially charged capacity of the battery pack as is.
- For details on the usable battery pack, see page 69.

Notes on the LCD screen and lens

- The LCD screen is manufactured using extremely high-precision technology so over 99.99% of the pixels are operational for effective use. However, some tiny black and/or bright dots (white, red, blue or green) may appear on the LCD screen. These dots are a normal result of the manufacturing process and do not affect the recording.



- Exposing the LCD screen or the lens to direct sunlight for long periods may cause malfunctions. Be careful when placing the camera near a window or outdoors.
- Do not press against the LCD screen. The screen may be discolored and that may cause a malfunction.
- Images may trail across on the LCD screen in a cold location. This is not a malfunction.

Continued ↓

On image data compatibility

- This camera supports “MP4 format” as movie file format. Therefore, movies recorded by this camera cannot be played on devices that do not support “MP4 format”.
- This camera does not support “AVCHD format” and therefore is not compatible with the playback and recording of movies in “AVCHD format” like a Digital HD Video camera recorder.
- Still images recorded by this camera are compressed/recorded in JPEG format. The file extension is “.JPG”.
- The camera conforms with DCF (Design rule for Camera File system) universal standard established by JEITA (Japan Electronics and Information Technology Industries Association).
- Sony does not guarantee that the camera will play back images recorded or edited with other equipment, or that other equipment will play back images recorded with the camera.

Warning on copyright

Television programs, films, videotapes, and other materials may be copyrighted. Unauthorized recording of such materials may be contrary to the provisions of the copyright laws.

No compensation for damaged content or recording failure

Sony cannot compensate for failure to record or loss or damage of recorded content due to a malfunction of the camera or recording media, etc.

The images used in this handbook

- The images used as examples in this handbook are reproduced images, and are not actual images shot using the camera.
- Design and specifications are subject to change without notice.

Notes on playing back movies on other devices

The camera is compatible with MPEG-4 AVC/H.264 Main Profile. Therefore, you cannot play back images on the camera with the devices which are not compatible with the MPEG-4 AVC/H.264.

On wireless network function

- The wireless network function built into this camera has been confirmed to conform with Wi-Fi specifications set forth by the Wi-Fi Alliance (WFA).
- Depending on the region, access to a wireless LAN may not be available, may require a separate service charge, or communications may be blocked or suffer from intermittent outages. For details, check with your wireless LAN administrator and/or service provider.
- Sony makes no guarantees whatsoever regarding the provision of the network service. Sony bears absolutely no responsibility for damages that may arise from the use of the network service even in the case of claims made by a third-party.

Security precautions when using wireless network products

- Security settings are absolutely critical when using a wireless network. Sony bears no responsibility for any damages that may arise due to security problems occurring due to failure to implement security measures or unavoidable circumstances associated with the use of a wireless network.

Life with “Bloggie”

Capture your life

At a party

Record still images at maximum 12M (4128 × 3096) and movies at maximum 1920 × 1080 30p full high-definition (page 33, 35). Also, you can record still images during movie recording (page 30).

During a walk

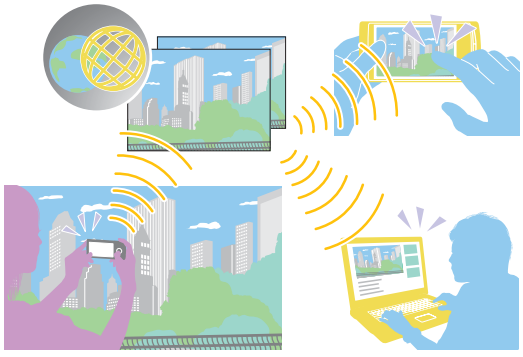
Take compact “Bloggie” with you anywhere, anytime. Take it out, and record casually.

Continued ↓

Share your life

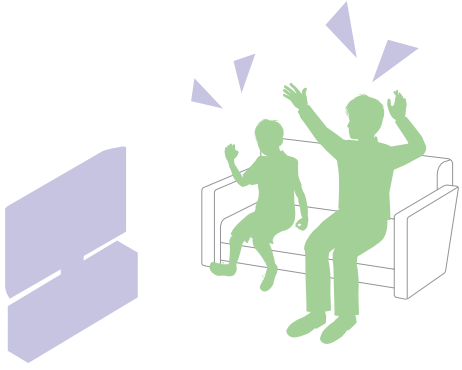
Import and upload captured moments

You can use Wi-Fi to directly upload and share recorded images from the camera (page 47).
You can also transfer images to a smartphone or a tablet computer (page 49).



Connect to TV

Connect your “Bloggie” to a TV with an HDMI cable (sold separately), and enjoy images on the big screen (page 59).



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Settings Search

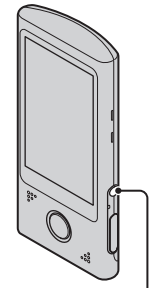
Setting items

All settings can be changed in both shooting and playback mode.

Items	Shooting/Playback mode
Wi-Fi Settings	✓
Beep	✓
Demo Mode	✓
Initialize	✓
HDMI Output	✓
LUN Settings(USB)	✓
Format	✓
Date & Time Setting	✓

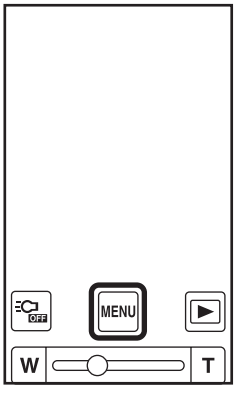
How to set items

1 Press the ON/OFF (Power) button.



ON/OFF (Power) button

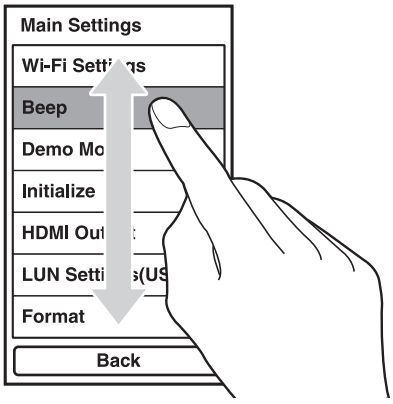
2 Tap [MENU] → [Main Settings].



Continued ↓

3 Tap the items.

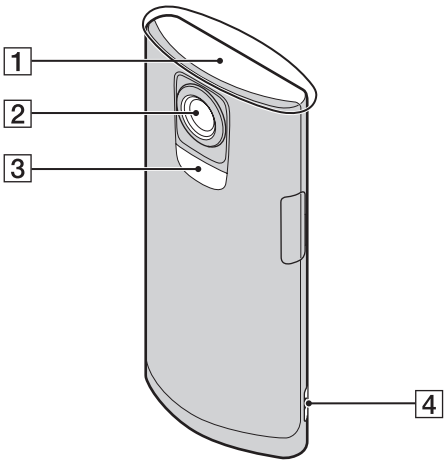
The displayed items scroll by dragging the LCD screen up and down with your finger.

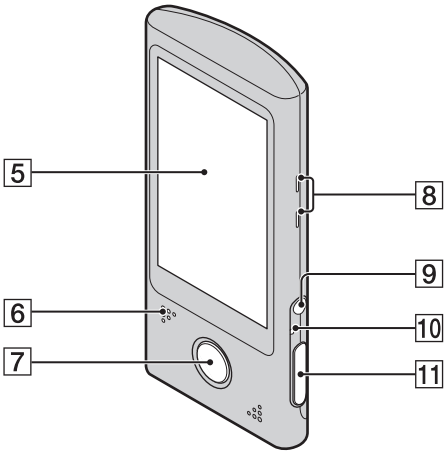


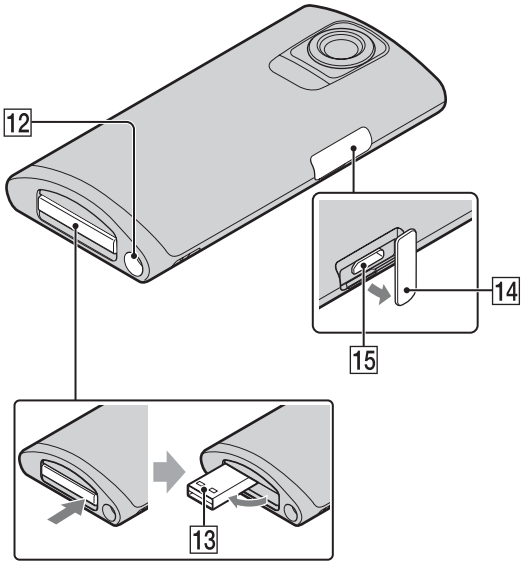
4 Tap the desired mode.

5 Tap [Back].

Identifying parts







1 Built-in antenna
- Do not cover the built-in antenna part with your hand when using Wi-Fi.

2 Lens

3 Light

4 Hook for wrist strap

5 LCD screen/Touch panel

6 Speaker

7 Movie button

8 Stereo microphone

9 ON/OFF (Power) button
- Press and hold the ON/OFF (Power) button for at least 7 seconds to force-quit the camera.

10 Charge lamp

11 (Shutter) button

12 Tripod receptacle
- Do not hold the camera when attaching the tripod.

13 Built-in USB arm

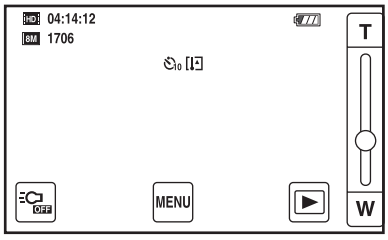
14 Jack cover

15 HDMI OUT jack (59)

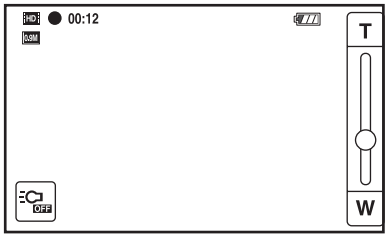
List of buttons/icons displayed on the screen

Buttons and icons are displayed on the screen to indicate the camera status.

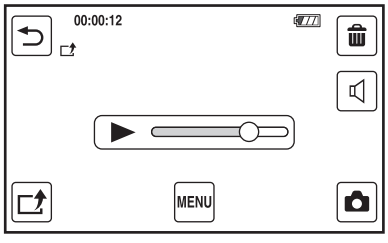
When in standby for shooting



When shooting movies



When playing back



Buttons

Display	Indication
MENU	Menu
T / W	Zoom scaling
	Viewing mode
	Light
	Playback bar
	Back
	Delete
	Share
	Adjusting volume
	Volume
	Exit the function
	Shooting mode

Icons

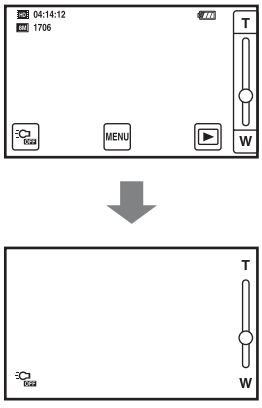
Display	Indication
	Battery remaining
	Low battery warning
12M 8M 2M	Photo Size (resolution)
	Movie Size
	Self-timer
1706	Number of recordable still images
●(green)	AE/AF lock
04:14:12	Recordable time
00:12	Recording time (m:s)
2012-1-1 9:30 AM	Recorded date/time of the playback image
●(red)	During movie recording
	Share
	Overheating warning
00:00:12	Counter

Continued ↓

Display	Indication
	During Wi-Fi connection

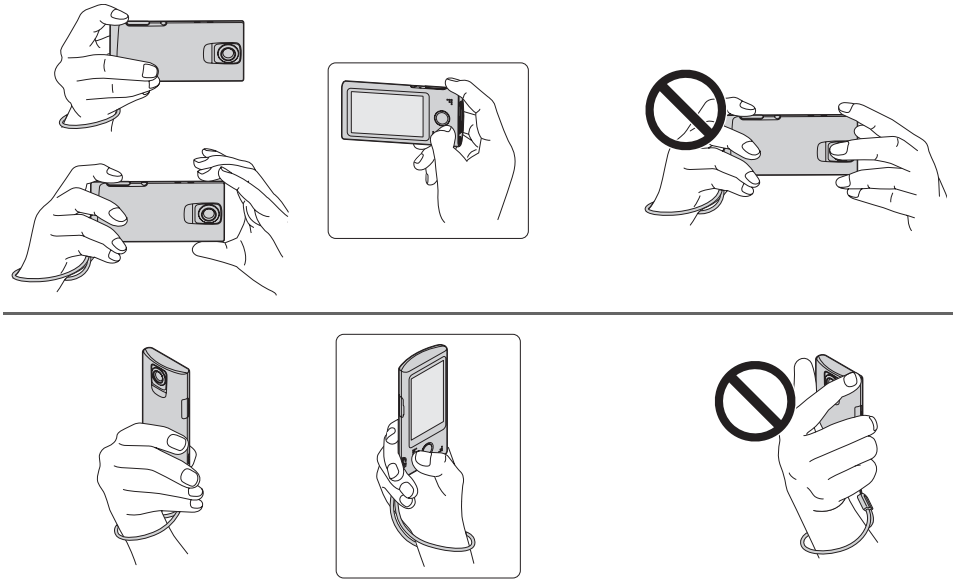
Notes

- Indicators and their positions are approximate and differ from what you actually see.
- The screen display shifts both horizontally and vertically depending on the camera aspect.
- The screen display disappears automatically after about 4 seconds. You can display it again by tapping the LCD screen.



How to hold the camera

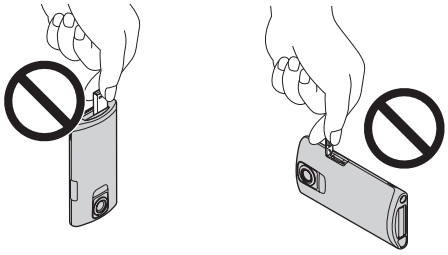
Be careful not to block the lens, stereo microphone, light or built-in antenna with your finger when shooting.



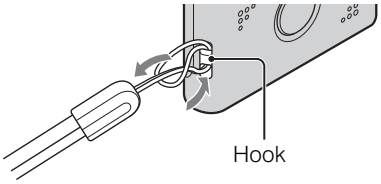
Note

- Do not cover the built-in antenna part with your hand if Wi-Fi connection is difficult.

Do not hold the built-in USB arm or HDMI OUT jack cover.



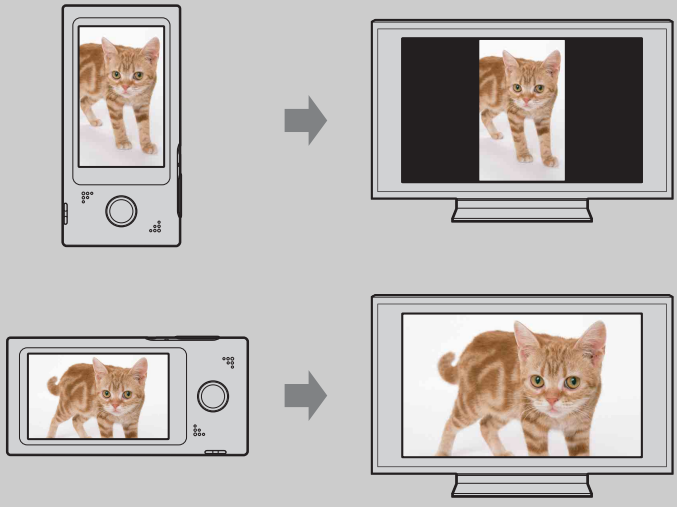
Attach the strap and place your hand through its loop to prevent the camera from damage by being dropped.



Continued ↓

When you shoot movies holding the camera vertically

Portrait images are recorded. Black bands appear on the left and right of the screen during playback on TV or computer. This is useful when shooting portrait objects.



How to use the touch panel

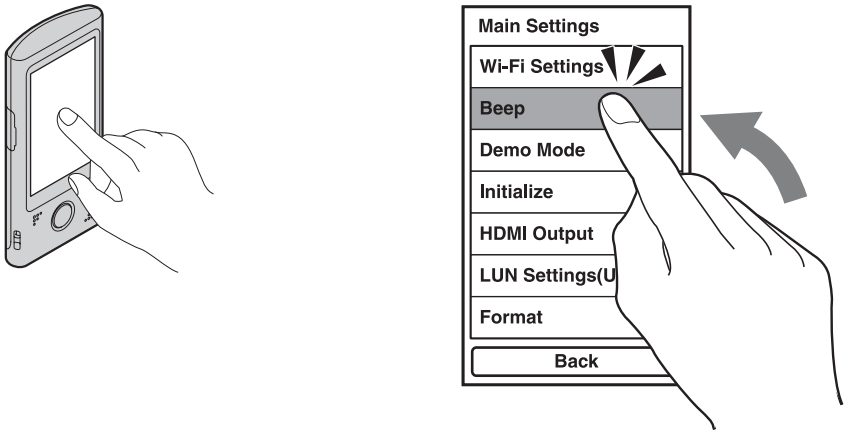
You can operate the camera by tapping the buttons on the LCD screen or dragging the screen.

Note

- Do not operate with a sharp-pointed object, such as pen or finger nail.

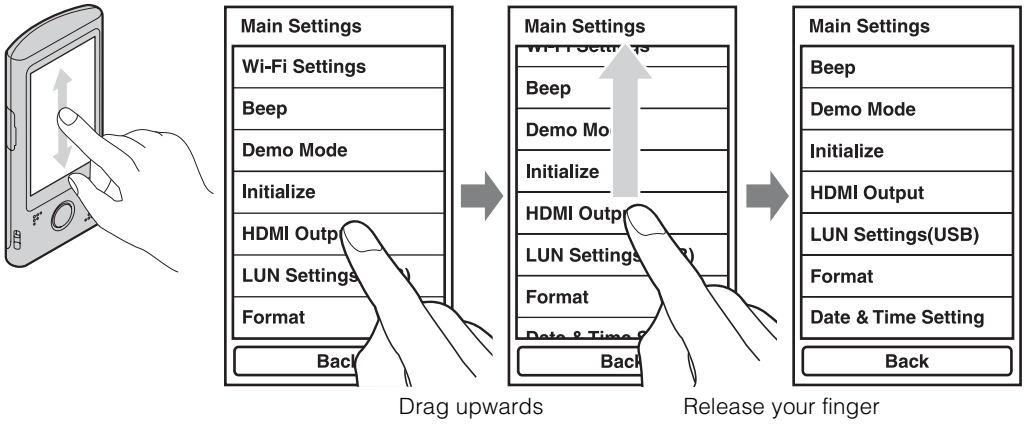
Select the items (Tap)

Lightly touch the buttons or items on the screen with your finger.



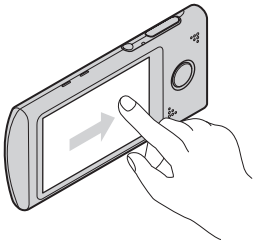
Scroll the screen (Drag)

Touch and slide the screen with your finger.



Display the next screen quickly (Flick)

Drag the screen quickly. To stop the screen, tap with your finger.



Checking the accessories supplied

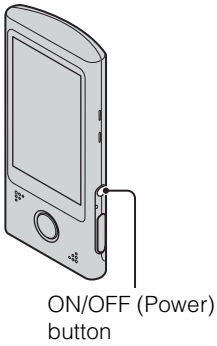
- USB connection support cable (1)
  (Sony Corporation 1-836-378-)

  Use this if the built-in USB arm of the camera cannot be connected to the computer (page 21).
- Wrist strap (1)
- Instruction Manual (1)
- Important Notice (1)
- Bloggie Handbook (this manual)
  This is included in the internal memory of this camera.

Charging the camera

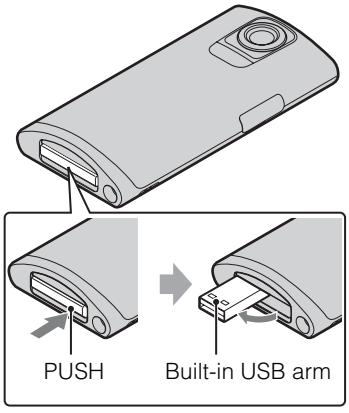
The camera's battery is continuously recharged whenever the camera is connected to a running computer.

1 Press the ON/OFF (Power) button to turn off the camera.



2 Push the "PUSH" part at the bottom of the camera.

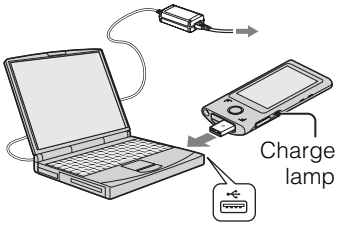
The built-in USB arm comes out as shown in the illustration.



3 Connect the camera to the computer that is turned on.

The charge lamp lights up in orange, and charging starts. When the charge lamp turns off, charging is finished.

- The charge lamp may turn off when the temperature is outside of the recommended operating temperature (10°C to 30°C (50°F to 86°F)).
- The charge icon is displayed on the LCD screen when charging is started. However, the icon disappears after a while.
- If the battery level is low (low battery), the charge icon may not be displayed on the LCD screen. In this case, check if the charge lamp is lighting up.



4 When charging is finished, delete the USB connection between the camera and computer.

Continued ↓

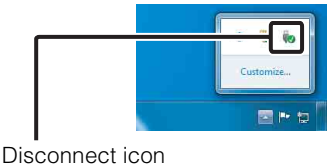
Notes

- While the camera is connected to a computer, you cannot operate the camera. Be sure to disconnect the camera before operation.
- Do not apply force to the camera, when you connect the camera to a computer. This may cause damage to the camera or the computer.
- When you connect the camera to a notebook computer that is not connected to an AC power source, the battery of the notebook computer may be depleted rapidly. Do not leave the camera connected to the computer for a long time.
- Charging the battery or the connection with customized or hand-built computers is not guaranteed. Depending on the type of USB device used, charging may not function properly.
- If you do not intend to use the camera for an extended period, charge the camera once every 6 to 12 months to maintain battery performance.

Deleting the USB connection

Windows 7

1 Click ⏏ on the tasktray.
2 Click the disconnect icon in Customize.
3 Click the device to remove.



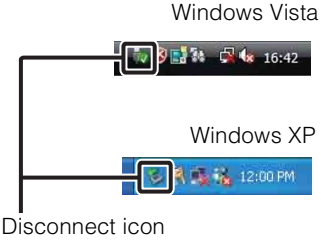
Disconnect icon

Windows Vista/Windows XP

Perform the procedures from step 1 to 3 below before:

- Disconnecting the USB connection support cable.
- Turning off the camera.

1 Double-click the disconnect icon on the tasktray.
2 Click (USB Mass Storage Device) → [Stop].
3 Confirm the device on the confirmation window, then click [OK].



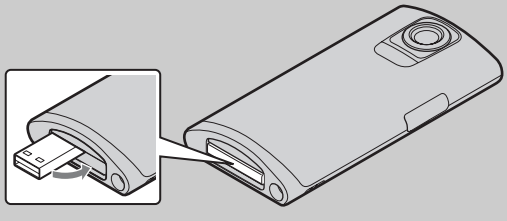
Disconnect icon

Note

- Drag and drop the drive icon to the “Trash” icon beforehand when you use a Mac computer, and the camera is disconnected from the computer.

To retract the built-in USB arm

Push the built-in USB arm back in the direction of the arrow until it clicks.



Continued ↓

How long does it take to charge the camera?

Charging time

Full charge time	
Computer	Approx. 330 min.
AC-UD20 (sold separately)	Approx. 150 min.

- Time required to charge a fully depleted battery at a temperature of 25°C (77°F). Charging may take longer under certain circumstances or conditions.
- You can rapid-charge the camera with a USB charger AC-UD20 (sold separately). To use, connect the USB charger to the USB jack of the supplied USB connection support cable, or directly to the built-in USB arm of the camera.

How long can I record or play back images?

Standard battery life

Recording time*1	
Continuous recording time*2	Approx. 125 min.
Typical recording time*3	Approx. 80 min.

Playback time
Approx. 160 min.

*1 Recording time is the time when you set image size to [1280×720 30p].
*2 Continuous recording time shows the approximate time available of a fully charged battery pack. Continuous recording of movies is possible for approximately 29 minutes. Also, recording stops automatically to prevent the file size from exceeding 2 GB.
*3 Typical recording time shows the approximate time available of a fully charged battery pack when you repeat recording start/stop, turning the power on/off and zooming.

Checking the remaining battery charge

A remaining charge indicator appears on the upper right of the LCD screen.

- The displayed battery remaining indicator may not be correct under certain circumstances.
- If the camera is running on battery power and you do not operate the camera for about 5 minutes, the camera turns off automatically to prevent wearing down the battery (Auto power off function).
- The Clock Setting screen appears when the camera is turned on for the first time (page 25).
- It takes about one minute until the correct battery remaining indicator appears.

Installing “Software” on a computer

1 Turn on the camera, then connect to a computer via USB.

2 Access the website: http://www.sony.net/start/bloggie.
Double-click [Computer] (in Windows XP, [My Computer]) → [START] → [Start_Bloggie].

3 Follow the instructions and install the software from the website.
Windows version: “PlayMemories Home”
Mac version: Upload software for Bloggie (“Share-it-Later for Bloggie”, “PlayMemories Online Uploader”)

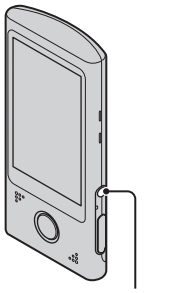
Note

- Availability of “PlayMemories Online Uploader” depends on your location.

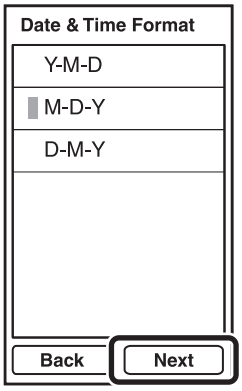
Setting the clock

1 Press the ON/OFF (Power) button.

The camera is turned on.
The demonstration movie plays back when you turn on the camera for the first time.



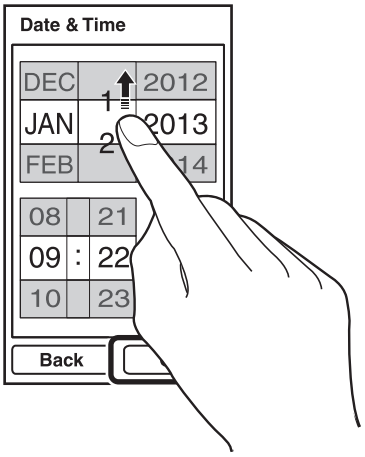
2 Select the desired date display format, then tap [Next].



3 Select Daylight Savings [On]/[Off], then tap [Next].

4 Scroll each item up or down to set the desired date and time, and tap [OK].

Midnight is indicated as 12:00 AM, and noon as 12:00 PM.



Note

- To stop the demonstration, double-tap the LCD screen.

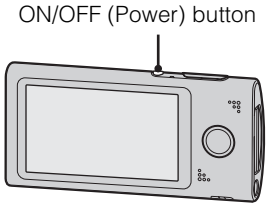
Continued ↓

To set the date and time again

Tap [MENU] → [Main Settings] → [Date & Time Setting] (page 58).

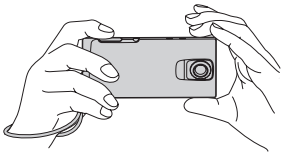
Shooting (Still images)

1 Press the ON/OFF (Power) button.



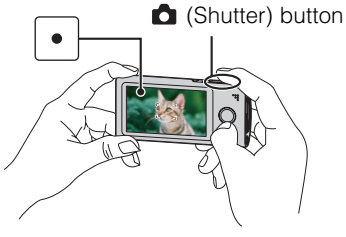
2 Compose the shot.

Be sure not to place fingers on the lens.
Touch and hold T on the T/W (zoom) bar to zoom in, W to zoom out.



3 Press the (Shutter) button halfway down.

When the image is in focus, a beep sounds and the ● indicator (AE/AF lock) lights on the top of the display.



4 Press the (Shutter) button fully down.

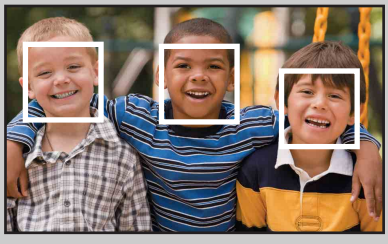
Continued ↓

If you shoot a still image of a subject that is difficult to focus on

- The shortest shooting distance is approximately 10 cm (4 inches).
- If the camera cannot focus on a subject automatically, the AE/AF lock indicator changes to slow flashing and the beep does not sound. Recompose the shot.
- Focusing may be difficult in the following situations:
  - It is dark and the subject is distant.
  - The contrast between the subject and the background is poor.
  - The subject is seen through glass.
  - The subject is moving quickly.
  - There is reflective light or shiny surfaces.
  - The subject is flashing.
  - The subject is backlit.

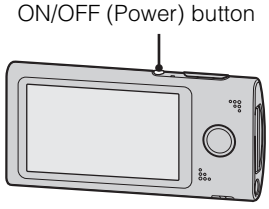
When shooting portrait

- When the camera detects faces, the white frames appear, and the focus and exposure are adjusted to the faces automatically (except during live streaming).
- The frames turn green when the faces are in focus by pressing the (Shutter) button half way down.
- The camera may not detect faces depending on the shooting condition.



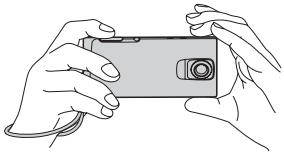
Shooting (Movies)

1 Press the ON/OFF (Power) button.



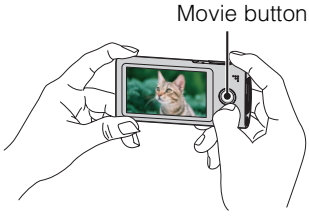
2 Compose the shot.

Be sure not to place fingers on the lens.
Touch and hold T on the T/W (zoom) bar to zoom in, W to zoom out.



3 Press the movie button.

To finish shooting the movie, press the movie button again.



Notes

- Continuous recording is possible for approximately 29 minutes.
- The maximum size of a single movie file is approximately 2 GB. Recording stops before 29 minutes if the file size reaches approximately 2 GB during movie recording.

Continued ↓

To shoot still images during movie recording

- Press the (Shutter) button fully down during movie recording.
- The recorded still image appears small on the LCD screen of the camera.

- The image sizes are as follows, depending on the movie size.
  - 1920 × 1080 30p: 1920 × 1080
  - 1280 × 720 30p/60p: 1280 × 720

What is the recording method of this camera?

For MPEG-4 AVC/H.264, the camera supports high definition images with an effective total number of scanning lines of 1080 or 720. The number of recorded image pixel is 1920 × 1080 or 1280 × 720, approximately 30 or 60 frames per second, and the image is recorded in progressive mode.

- MPEG: Moving Picture Experts Group
- AVC: Advanced Video Codec

MPEG-4 AVC/H.264 is a standard of video camera, which uses highly efficient image compression encoding technology to record HD (high definition) images. Compared with the existing image compression encoding technology, MPEG-4 AVC/H.264 is able to compress images even more effectively.

Zoom

You can enlarge the image when shooting. The camera's zoom function can enlarge images up to 4×.

1 Touch and hold T or W.

Touch and hold T to zoom in, W to zoom out.

T side

W side

Notes

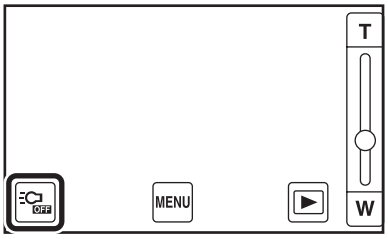
- Only Digital zoom is available with this camera.
- You may not be able to zoom in or out images smoothly when using zoom function.
- Image quality decreases as the images are digitally processed.

Light

You can shoot with the light of the camera turned on.

1 Press on the shooting screen.

To turn off the light, press again.



Notes

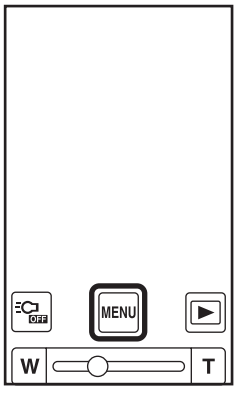
- You can use the light in shooting mode only.
- The camera emits very bright light. Do not aim directly at eyes at close range.
- Battery power wears down faster when the light is turned on.

Photo Size

The photo size determines the size of the image file that is recorded when you take an image. The larger the photo size, the more detail will be reproduced when the image is printed on large-format paper. The smaller the photo size, the more images can be recorded.

1 Tap [MENU] → [Shooting Settings].

Tap the LCD screen when the screen display is not shown.



2 Tap the desired size from [Photo Size].

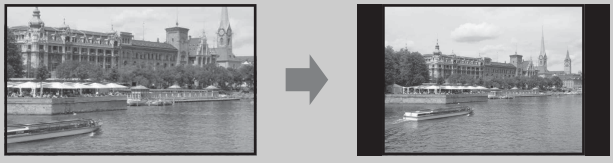
	Photo Size	Usage guidelines	No. of images	Printing
	12M **(4128×3096 4:3)**	For prints up to A3+ size	Less	Fine
✓	8M **(3840×2160 16:9)**	For viewing on a high-definition TV, and for prints up to A4 size		
	2M **(1920×1080 16:9)**	For viewing on a high-definition TV	More	Rough

Note

- When you print still images recorded with 16:9 aspect ratio, both edges may be cut off.

When you select 12M (4128 × 3096 4:3)

The aspect ratio switches to 4:3 when shooting images.

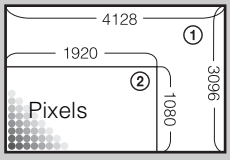


Continued ↓

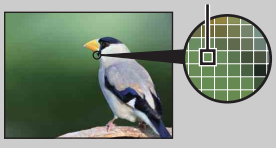
On “image quality” and “image size”

A digital image is made up of a collection of small dots called pixels.
If it contains a large number of pixels, the image becomes large, it takes up more memory, and the image is displayed in fine detail. “Image size” is shown by the number of pixels. Although you cannot see the differences on the screen of the camera, the fine detail and data processing time differ when the image is printed or displayed on a computer screen.

Description of the pixels and the image size



① Image size: 12M
4128 pixels × 3096 pixels = 12,780,288 pixels
② Image size: 2M
1920 pixels × 1080 pixels = 2,073,600 pixels



Many pixels
(Fine image quality and large file size)

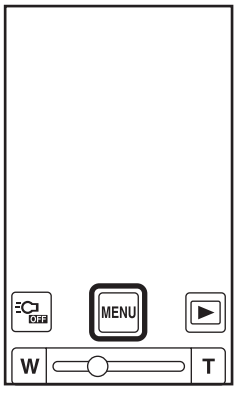
Few pixels
(Rough image quality but small file size)

Movie Size

The larger the movie size, the higher the movie quality.
The movies shot with the camera will be recorded in MPEG-4 AVC/H.264 Main Profile, approximately 30 or 60 frames per second, Progressive, AAC LC, “MP4 format”.

1 Tap [MENU] ⟶ [Shooting Settings].

Tap the LCD screen when the screen display is not shown.



2 Tap the desired size from [Movie Size].

	Movie Size	Usage guidelines
	(1920×1080 30p)	Shoots HD (high definition) quality movies in sizes suited for display on computer or high definition TV
	(1280×720 60p)	Shoots the rapidly moving action scenes such as sports smoothly with HD (high definition) quality
✓	**(1280×720 30p)**	Shoots HD (high definition) quality movies in sizes suited for display on computer

Progressive playback

The camera supports progressive mode*, which is used in computers, and therefore is suited for playing back images on computers.

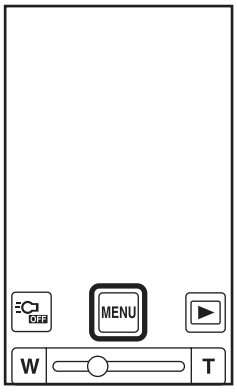
* The progressive mode is a type of movie recording method, which reads out all image pixels at once.

Flicker Reduction

Curbs the flicker generated by fluorescent by using the electro-shutter.

1 Tap [MENU] → [Shooting Settings].

Tap the LCD screen when the screen display is not shown.

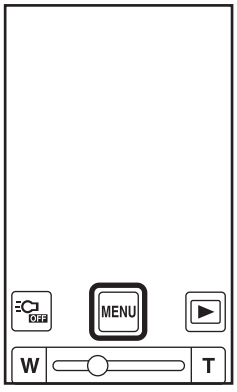


2 Tap the desired mode from [Flicker Reduction].

	ON (On)	Uses the Flicker Reduction.
✓	OFF (Off)	Does not use the Flicker Reduction.

Self-Timer

1 Tap [MENU] → [Shooting Settings].
Tap the LCD screen when the screen display is not shown.

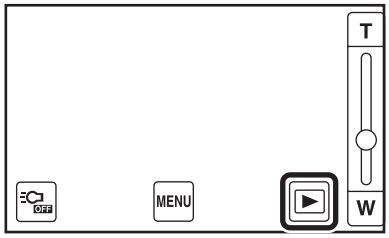


2 Tap the desired mode from [Self-Timer].

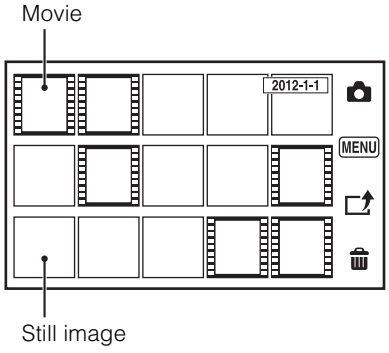
✓	**(Off)**	Does not use the self-timer.
	(10sec)	Sets the 10 seconds delay self-timer. When you press the (Shutter) button or the movie button, a self-timer icon flashes, and after rapid beep sounds are heard, the camera will shoot.

Viewing

1 Tap (Playback) to switch to playback mode.
The index screen appears.

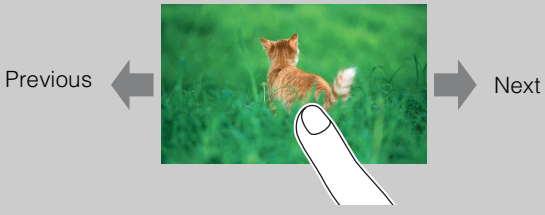


2 Select an image and tap.
A single movie plays back when an image is selected.



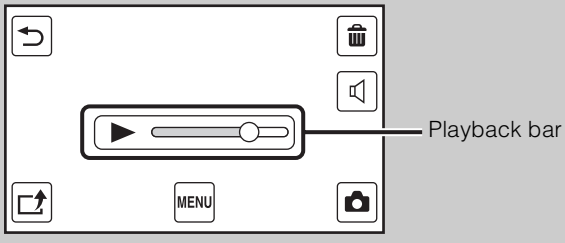
To show previous/next images

Drag your finger in the direction of the arrows.
You can send multiple images at one time by flicking.



To search for a point in a movie to start playback

Drag ● on the playback bar to the desired scene.

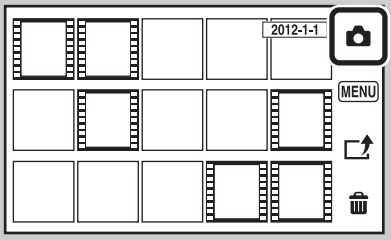


Continued ↓

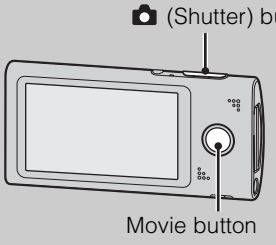
To go back to shooting mode

Do one of the following:

– Tap on the index screen.



– Press the (Shutter) button or movie button.



To go back to the index screen

Tap .

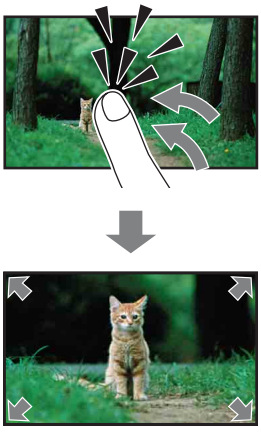
Playback zoom

Enlarges the played back still images.

1 Tap (Playback) to switch to playback mode.

2 Select the still image and tap.

3 Double-tap the part you want to enlarge.



4 Adjust the magnification and the part to enlarge.

Each double-tap on the LCD screen enlarges the image up to 8 times its original size.
Drag the image to change the part to enlarge.
To cancel playback zoom, tap .

Note

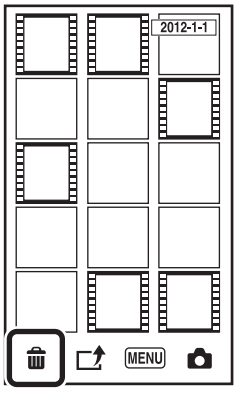
- You cannot operate playback zoom when an HDMI cable (sold separately) is connected.

Delete

Allows you to select unwanted images for deletion.

1 Tap (Playback) to switch to playback mode.

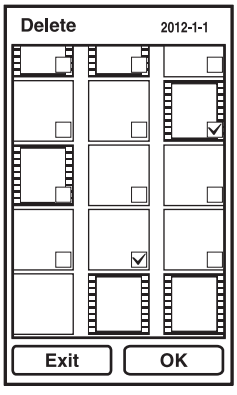
2 Tap (Delete) on the index screen.



3 Tap the center of the images you want to delete.

Repeat the above step until there are no more images to be deleted.

Select an image with a ✓ mark again to release the ✓ mark.



4 Tap [OK] → [OK].

To delete images during playback

Tap (Delete) → [OK] in single-image mode.

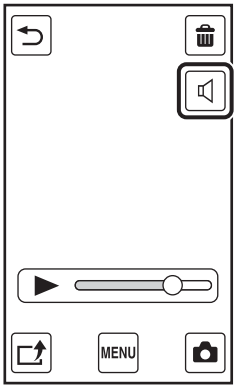
Volume control

You can adjust the volume for playback movies.

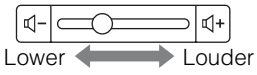
1 Tap (Playback) to switch to playback mode.

2 Select a movie and tap.

3 Tap (Volume control).
Tap the LCD screen when the screen display is not shown.



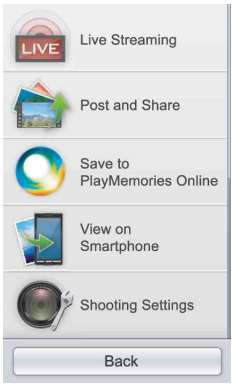
4 Touch and hold + to increase, − to decrease the volume.



What you can do with Wi-Fi

Wi-Fi allows you to connect to the network service via a LAN environment, either in or outside the home.
Before you connect, you first need to register your access point.
You can use Wi-Fi from the menu screen, which is opened by tapping the MENU button.
Depending on the region, menu contents may differ.

The following functions are available from the MENU button.
– Live Streaming (page 46)
– Post and Share (page 47)
– Save to PlayMemories Online (page 48)
– View on Smartphone (page 49)



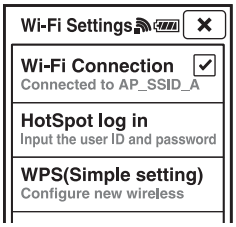
Notes

- Since a wireless LAN exchanges information by radio waves, LAN connection can be anywhere within a given coverage area. Be aware of the risks of hacking by a vicious third party. It is recommended to secure your wireless LAN environment, and its use is left to your discretion.
- It is not possible to browse the web using Wi-Fi of this camera.
- Wi-Fi transferred image size:
  – Movie: 480 × 270 30p
  – Photo: 1920 × 1080 16:9/1440 × 1080 4:3 or smaller

Setting Wi-Fi

1 Press the ON/OFF (Power) button.

2 Tap [MENU] → [Main Settings] → [Wi-Fi Settings], and [Wi-Fi Connection] to show the ✓ mark.



3 Select an access point to connect.

4 Enter the password.

Notes

- Network device connections and setting methods differ according to the device.
- The following are needed to connect the camera to a network:
  - An Internet service provider (ISP) contract
  - ADSL modem or other network device
  - Access point or wireless router
  - Access point setting information (SSID and password)
- If you do not know the settings to make, be sure to check with the person who set up the access point, administrator, or with your service provider.
- If data transfer is not operated for 5 minutes, the camera turns off automatically.

When using a hotspot (public Wireless LAN access point)

When you use Wi-Fi to connect to a hotspot at a hotel or airport, tap [MENU] → [Wi-Fi Settings] → [Hotspot Login], and perform the authentication procedure.

When using a WPS-capable access point

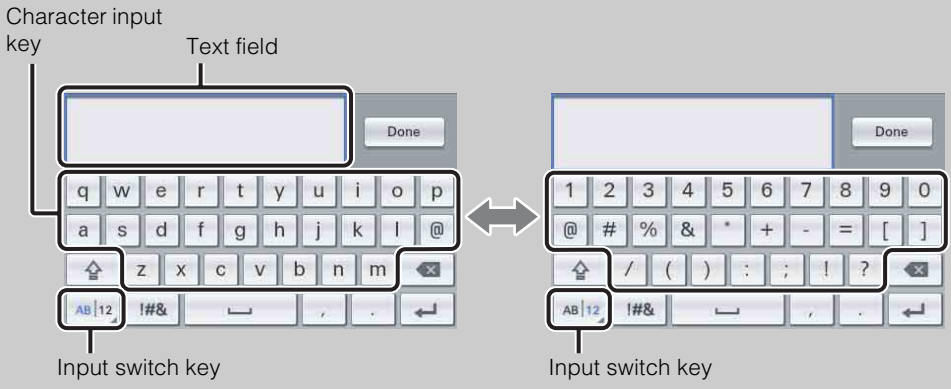
Tap [MENU] → [Wi-Fi Settings] → [WPS].
For details, refer to the instruction manual of the access point.

Continued ↓

How to use the keyboard

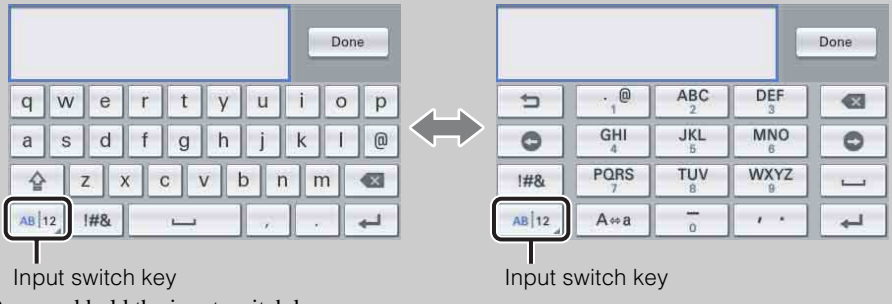
Touching the text field brings the keyboard up. Enter your text, then touch Done.

- The number of characters you can input is limited.
- Hold the camera horizontally.



Tapping the input switch key toggles character input key between alphabetical and numerical input.

You can also set the dial pad keyboard.



① Press and hold the input switch key.
The pop up appears.
② Tap .

The next time you text, the keyboard you used last time to text appears again.
To set the keyboard back to the default, press and hold the input switch key, then tap .

Button	Function
	Undo
	Backspace
	Shift
A⇔a	Switch between upper case and lower case.

Live Streaming

You can send images you are taking to family and friends in real time.
Registration with the live streaming service is required in advance.

1 Press the ON/OFF (Power) button.

2 Register with a live streaming service for this purpose.
- For details, see http://www.sony.net/start/bloggie.

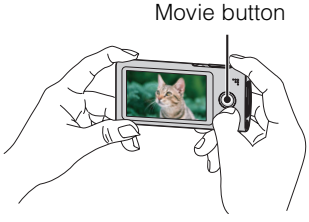
3 Tap [MENU] → [Live Streaming].

4 Establish the Wi-Fi connection.

5 Enter [Username] and [Password] on the login screen, then tap [OK].

6 Press the movie button.

To finish live streaming, press the movie button again.
- You can enter image titles using the keyboard.



Notes

- You cannot shoot still images during live streaming.
- To enable the Live Streaming function, you first need to establish your own service account. You will also need to set up real-time distribution from the website.
- The camera does not detect faces during live streaming, and therefore does not adjust focus or exposure for those faces automatically.

To delete an image currently being uploaded

Tap ⊗ on the REC review screen, then tap [OK].
- Images are deleted from the live streaming service, but remain in the internal memory of the camera.

How to use Wi-Fi

For details on how to register and using live streaming, see the introduction of Wi-Fi features in website: “http://www.sony.net/start/bloggie”.

Uploading images directly (Post and Share)

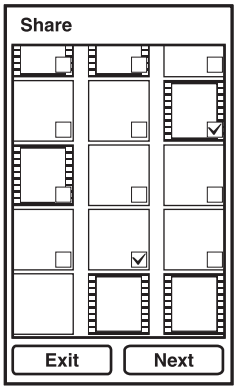
You can upload images to your favorite sharing site soon after recording.

1 Tap (Playback) to switch to playback mode.

2 Tap (Share) on the index screen.

- You can also share images from the single-image mode.
- You can also share images by tapping the share button on the screen displayed when shooting ends.

3 Tap images you want to upload, then tap [Next].



4 Select the sharing site to upload from the share list, then tap [OK].

If Wi-Fi connection has been established before, the camera automatically connects with Wi-Fi.

To return to the index screen, tap [Back] → [Exit].

5 Tap [Login] at each service. Enter [Username] and [Password] after the Wi-Fi connection, and tap [OK] → [Upload].

- All the images you selected can be uploaded together to the sharing site later.

What you can do with Share

- Images that you stopped uploading can be uploaded later together by tapping [MENU] → [Post and Share], or by “PlayMemories Home”.
- You can select the upload destination from “PlayMemories Home”.
- Depending on the region or country, available services may differ.

How to use Wi-Fi

For details, see the introduction of Wi-Fi features in website: “http://www.sony.net/start/bloggie”.

Uploading images to “PlayMemories Online” (Save to PlayMemories Online)

You can upload and save images recorded on the camera to “PlayMemories Online”. By accessing your contents from an Internet device, such as a computer, smartphone, tablet computer, or Bravia, you can enjoy recorded images anywhere and anytime. A “PlayMemories Online” account is required in advance.

1 Tap [MENU] → [Save to PlayMemories Online].

2 Establish the Wi-Fi connection.

3 Enter [Username] and [Password] on the login screen, then tap [OK].

4 Tap [Upload].

Uploading starts.
Only images which have not been uploaded from the camera are uploaded.
When uploading has finished, the upload completion screen is displayed.

5 Tap ×.

Note

- To use “PlayMemories Online”, you need to establish your own account.

How to use Wi-Fi

For details, see the introduction of Wi-Fi features in website: “http://www.sony.net/start/bloggie”.

Copying images to a smartphone (View on Smartphone)

You can copy recorded images to a smartphone or tablet computer. Installing a suitable application (“PlayMemories Mobile”) for this purpose to the smartphone or tablet computer is required in advance.

1 Tap [MENU] → [View on Smartphone].

2 Tap [View password] and perform Wi-Fi setting on the smartphone, using the [SSID] and the [Password] shown.

3 Select and transfer the camera contents using the installed application on the smartphone.

Note

- Depending on their size, certain images transferred to a smartphone may not be playable.

How to use Wi-Fi

For details, see the introduction of Wi-Fi features in website: “http://www.sony.net/start/bloggie”.

Using the software

See page 24 for installing the software.
The following operations become available when the software has been installed;
– Search for images you stopped uploading from the camera, and upload them via computer.
– Edit the share list on the camera.

Note

- Set [LUN Settings(USB)] to [Multi].

Notes on computer software

In order to use “PlayMemories Home” to enjoy the benefits of the image uploading service or other services (the “services”) provided by these and other websites, you must consent to the following.

- Some websites require registration procedures and/or fees to use their services. In using such services, you must comply with the terms and conditions established by the websites concerned.
- Services may be terminated or changed in accordance with the convenience of the website operators. Sony will not be held responsible for any trouble occurring between the users and third parties or any inconvenience caused to users relating to the utilization of the services inclusive of the termination of or changes to such services.
- To view a website, you will be redirected to it by the Sony server. There may be times when you cannot access the website because of server maintenance or for other reasons.
- If the operation of the Sony server is to be terminated, you will be notified of the termination ahead of time on Sony’s website, etc.
- The URLs to which you are redirected by the Sony server and other information may be recorded for the purposes of improving Sony’s future products and services. However, no personal data will be recorded on such occasions.

Recommended computer environment

See page 24 for installing the software.

Windows

The following computer environment is recommended when using “PlayMemories Home”, and importing images via a USB connection.

OS (pre-installed)	Microsoft Windows XP*1 SP3/Windows Vista*2 SP2/ Windows 7 SP1
Others	**CPU*3:** Intel Pentium III 800 MHz or faster (For playing/ editing the High Definition movies: Intel Core Duo 1.66 GHz or faster/Intel Core 2 Duo 1.66 GHz or faster **Memory:** 512 MB or more (For playing/editing the High Definition movies: 1 GB or more) **Hard Disk:** Disk space required for installation: approximately 500 MB **Display:** 1,024 × 768 dots or more

*1 64bit and Starter Editions are not supported.
*2 Starter Edition is not supported.
*3 Minimum requirement to play back HD movies
The above system requirements do not guarantee proper operation.

Mac

The following computer environment is recommended when using “Share-it-Later for Bloggie” or “PlayMemories Online Uploader”.

OS (pre-installed)	**USB Connection:** Mac OS X (v10.5 to v10.7)

Note on playback of movie files (MPEG-4 AVC/ H.264)

To play back and edit movie files (MPEG-4 AVC/H.264) recorded by the camera on your computer, you need to install the software compatible with MPEG-4 AVC/H.264 or the “PlayMemories Home” (Windows).

- Even in a PC environment where operations are guaranteed, images may not play back smoothly due to dropped frames, etc. Note that the imported image itself is not affected.
- If you are using a notebook PC, be sure to use the PC with the AC adaptor plugged in. Sometimes normal operations are not possible due to the power savings function of the PC.

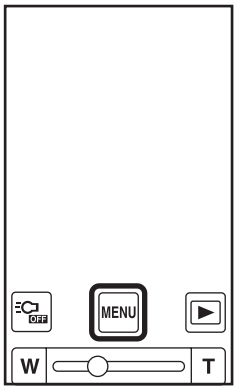
Note

- Operations are not guaranteed, even on computers fulfilling the above system requirements. For example, other open or background applications currently running may limit product performance.

Beep

Sets the sound for when you operate the camera.

1 Tap [MENU] → [Main Settings] → [Beep] → desired mode.

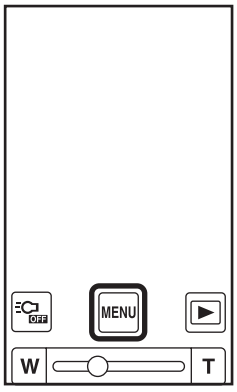


✓	**On**	Turns on the beep sound when you press the (Shutter) button or movie button.
	Off	Turns off the beep sound.

Demo Mode

Performs a demonstration of the camera.

1 Tap [MENU] → [Main Settings] → [Demo Mode] → desired mode.



✓	**On**	Performs a demonstration.
	Off	Does not perform a demonstration.

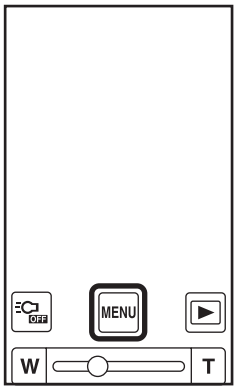
Note

- The demonstration stops when operating any of the following.
  - Touch LCD screen.
  - Press the (Shutter) button or movie button.
  - Turn off the power.

Initialize

Initializes the setting to the default setting.
Even if you execute this function, the images are retained.

1 Tap [MENU] → [Main Settings] → [Initialize] → [OK].



Note

- Perform initialization after charging the camera to prevent the camera from turning off during the process.
- The following Wi-Fi connection settings are also initialized:
  – Login information for each network service
  – Wi-Fi access point information

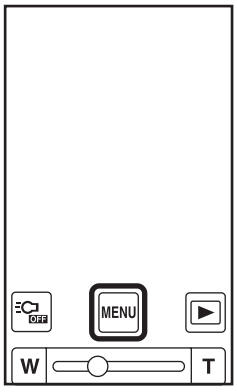
When the camera does not work properly

Press and hold the ON/OFF (Power) button for at least 7 seconds, and force-quit the camera (page 13). Then turn the camera on again.

HDMI Output

Selects the type of signal to be output to a TV from the HDMI OUT jack. If images are not displayed on the TV clearly, changing the setting may improve the display.

1 Tap [MENU] → [Main Settings] → [HDMI Output] → desired mode.

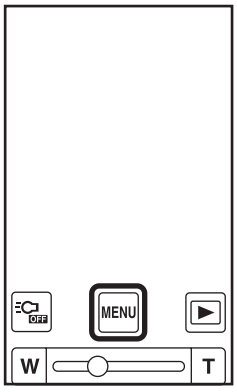


✓	**60Hz**	Outputs with 60Hz.
	50Hz	Outputs with 50Hz.

LUN Settings(USB)

Sets the display method for the recording media displayed on a computer screen or other monitor when the camera is connected with a computer or AV component using a USB connection.

1 Tap [MENU] → [Main Settings] → [LUN Settings(USB)] → desired mode.

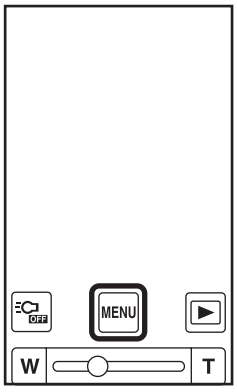


✓	**Multi**	Select this setting when you connect the camera to a computer.
	Single	Select this setting in cases where the images are not displayed when the camera is connected to a device other than a computer.

Format

Formats the internal memory.

1 Tap [MENU] → [Main Settings] → [Format] → [OK].



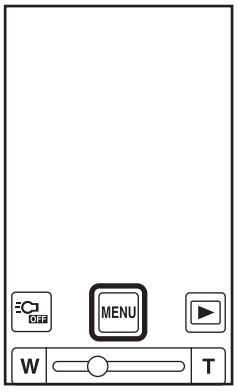
Note

- Note that formatting permanently erases all data.

Date & Time Setting

Sets the date and time again.

1 Tap [MENU] → [Main Settings] → [Date & Time Setting].



2 Tap the items you want to set.

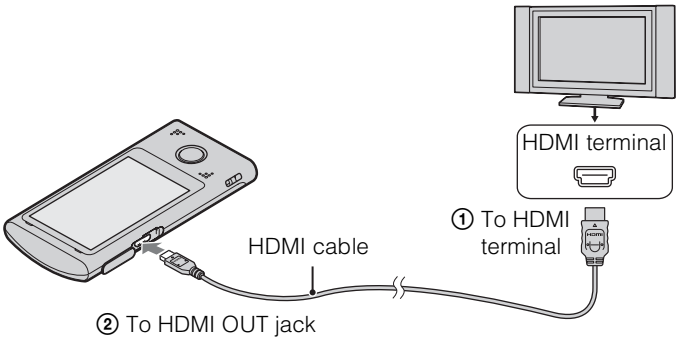
Date & Time Format	Selects the date and time display format.
Daylight Savings	Pushes forward an hour.
Date & Time	Sets the date and time (page 25).

Viewing images on a TV

Connect the camera to a TV which has an HDMI terminal with an HDMI cable (sold separately). Refer also to the instruction manuals of the TV.

1 Turn off both the camera and the TV.

2 Open the jack cover and connect the camera to the TV with the HDMI cable (sold separately).



3 Turn on the camera.

4 Turn on the TV and set the input.
Images shot with the camera appear on the TV.

5 Tap images to play back.

Notes

- Connect the mini-HDMI jack of the HDMI cable (sold separately) to the HDMI OUT jack of the camera.
- Do not connect the output terminal of the camera to that of other devices. This may result in malfunction.
- Some devices may not work properly. Image and sound may not be output.
- Use an HDMI cable with the HDMI logo.

On TV color systems

If you want to view images on a TV screen, you need a TV with an HDMI terminal and an HDMI cable (sold separately). The color system of the TV must match that of the camera. Check the following lists for the TV color system of the country or region where the camera is used, and set [HDMI Output] (page 55).

NTSC system

Bahama Islands, Bolivia, Canada, Central America, Chile, Colombia, Ecuador, Jamaica, Japan, Korea, Mexico, Peru, Surinam, Taiwan, the Philippines, the U.S.A., Venezuela, etc.

PAL system

Australia, Austria, Belgium, China, Croatia, Czech Republic, Denmark, Finland, Germany, Holland, Hong Kong, Hungary, Indonesia, Italy, Kuwait, Malaysia, New Zealand, Norway, Poland, Portugal, Rumania, Singapore, Slovak Republic, Spain, Sweden, Switzerland, Thailand, Turkey, United Kingdom, Viet Nam, etc.

PAL-M system

Brazil

PAL-N system

Argentina, Paraguay, Uruguay

SECAM system

Bulgaria, France, Greece, Guiana, Iran, Iraq, Monaco, Russia, Ukraine, etc.

Troubleshooting

If you experience trouble with the camera, try the following solutions.

❶ Check the items on pages 61 to 67.

❷ Turn the power off and then on again.

❸ Press and hold the ON/OFF (Power) button for at least 7 seconds, and force-quit the camera. Then turn the camera on again (page 13).

❹ Consult your Sony dealer or local authorized Sony service facility.

Be aware that by sending the camera for repair, you give consent that the contents of the internal memory, music files may be checked.

Additional information on this product and answers to frequently asked questions can be found at our Customer Support Website.
http://www.sony.net/

Battery pack and power

Cannot turn on the camera.

- The battery pack is discharged. Charge the camera.

The power turns off suddenly.

- Depending on the camera and battery temperature, the power may turn off automatically to protect the camera. In this case, a message is displayed on the LCD screen before the power turns off.
- If you do not operate the camera for a certain period of time while the power is on, the camera turns off automatically to prevent wearing down the battery pack. Turn the camera on again.

Battery life is short.

- Charge the battery until the charge lamp disappears.
- You are using the camera in an extremely hot or cold location, or the charging is insufficient. This is not a malfunction.
- If you have not used the camera for a prolonged period, the efficiency of the battery will be improved by repeatedly charging and discharging it.
- When usable battery life becomes half the usual time, even after charging the battery fully, the battery may need to be replaced. Consult your nearest Sony dealer.

Cannot charge the camera. (Cannot turn on the charge lamp.)

- Turn off the camera and make the USB connection.
- Disconnect the USB connection support cable, and then reconnect it.
- Use the USB connection support cable (supplied).
- Charge the battery in an ambient temperature of 10°C to 30°C (50°F to 86°F).
- Turn on the computer and connect the camera.
- Release the computer from sleep or hibernation status.
- Connect the camera directly to a computer using the supplied USB connection support cable.
- Connect the camera to a computer with the operating system that is supported by the camera.
- After trying the remedies above, if the problem still persists, press and hold the ON/OFF (Power) button for at least 7 seconds, and force-quit the camera. Then reconnect it to the computer using the supplied USB connection support cable.
- You cannot charge the camera when using a noncompliant USB charger.

The remaining charge indicator is incorrect.

- This phenomenon occurs when you use the camera in an extremely hot or cold location.
- A discrepancy arose between the remaining charge indicator and the actual remaining battery charge. Fully discharge the battery pack once, then charge it to correct the indication.
- The battery pack is dead (page 69). Consult your nearest Sony dealer.

Shooting still images/movies

Cannot record images.

- Check the free capacity of the internal memory. If it is full, delete unnecessary images (page 41).

The date and time are not displayed on the LCD screen.

- While shooting, the date and time are not displayed. They are displayed only during playback.

Cannot insert dates on images.

- The camera does not have a feature for superimposing dates on images.

Dots appear and remain on the screen.

- This is not a malfunction. These dots are not recorded.

Viewing images

Cannot play back images.

- The folder/file name has been changed on your computer.
- Playback on the camera cannot be guaranteed if files contain images processed on a computer, or images shot by another camera.
- The camera is in USB mode. Delete the USB connection (page 22).

The image appears rough right after playback starts.

- This may happen due to image processing. This is not a malfunction.

The image does not appear on the TV.

- Set [HDMI Output] to [60Hz] in NTSC region, [50Hz] in PAL region (page 55).
- Check whether the connection is correct (page 59).

The top and bottom edges of images are trimmed slightly on a connected TV.

- The LCD screen of the camera can display recording images across the entire screen (full pixel display). However, this may cause slight trimming of the top, bottom, right, and left edges of images when played back on a TV that is not compatible with full pixel display.

Black bands appear on the left and right of the screen.

- Black bands appear on the left and right of the screen when viewing movies recorded with the camera held in the vertical position on a TV or a computer. This is not a malfunction.

Deleting

Cannot delete an image.

- Undo the protection on a computer.

Computers

Your computer does not recognize the camera.

- When the battery level is low, charge the camera.
- Turn on the camera and connect to a computer.
- Use the USB connection support cable (supplied).
- Disconnect the USB connection support cable from both the computer and the camera, and connect it again firmly.
- Disconnect all equipment other than the camera, the keyboard and the mouse from the USB connectors of your computer.
- Connect the camera directly to your computer without passing through a USB hub or other device.
- Set [LUN Settings(USB)] to [Multi] (page 56).

Cannot import images.

- Connect the camera and your computer correctly making a USB connection (page 51).
- When you format the internal memory with a computer, you may not be able to import the images to a computer. Format the internal memory with the camera, and shoot (page 57).

After making a USB connection, “PlayMemories Home” does not start automatically.

- Download and install the “PlayMemories Home” to a computer, and make the USB connection after both the camera and a computer are turned on.

Cannot play back images on your computer.

- Consult the computer or software manufacturer.

The image and sound are interrupted by noise when you view a movie on a computer.

- You are playing back the movie directly from the internal memory. Import the movie to your computer using the “PlayMemories Home” and play it back.

Wireless network

Cannot establish a connection with the Wireless LAN access point.

- Check to make sure the power of the Wireless LAN access point is on.
- The communication range may be shortened by the surrounding conditions, such as various obstacles, radio wave traffic, and the wall material between this camera and the Wireless LAN access point. Change the location of the camera or move the camera closer to the access point.
- Check whether an encryption key (WEP/WPA) or other special settings (Fixed IP address, proxy settings, etc.) are needed to connect to the access point.
- When the access point is set so that the SSID is hidden, the SSID may not be displayed on the network list. Check the SSID of the access point with an administrator and make settings manually. Or cancel the setting on the access point.
- Microwave ovens or Bluetooth-enabled devices use the 2.4 GHz wavelength and could hinder the communication. If such devices are in the vicinity, move the camera away from those devices or shut those devices down.

Cannot enter the encryption key.

- For details on the verification method used for the encryption key (WEP/WPA), see the operation manual for the access point or the information listed on the bottom panel of the device.
- The number of characters that can be input differs depending on the encryption type.
- This camera cannot be connected to a 5 GHz access point.

It takes too much time to transfer an image.

- The communication range may be shortened by the surrounding conditions, such as various obstacles, radio wave traffic, and the wall material between the devices or between this camera and the Wireless LAN access point. Change the location of the devices, put the devices closer together, or move the camera closer to the access point.
- You may be getting a crossed connection with another Wireless LAN access point. Set the wireless channel at the Wireless LAN access point. For further information, refer to the operating manual of the Wireless LAN access point.
- Microwave ovens or Bluetooth-enabled devices use the 2.4 GHz wavelength and could hinder the communication. If such devices are in the vicinity, move the camera away from those devices or shut those devices down.

Cannot connect to a hotspot (public Wireless LAN access point) service.

- Check with the hotspot service provider that you have contracted with.

Others

The camera does not work properly.

- Press and hold the ON/OFF (Power) button for at least 7 seconds, and force-quit the camera. Then turn the camera on again.

The lens gets fogged.

- Moisture condensation has occurred. Turn off the camera and wait about an hour for the moisture to evaporate.

The camera becomes warm when you use it for a long time.

- This is not a malfunction.

The Clock Set screen appears when you turn on the camera.

- Set the date and time again (page 25).

The date or time is incorrect.

- Set the date and time again (page 58).

Warning indicators and messages

If the following messages appear, follow the instructions.

- The battery level is low. Charge the battery pack immediately. Depending on the conditions of use, the indicator may flash even though there are still 5 to 10 minutes of remaining battery time left.

System error

- Turn the power off and then on again.

- If you record movies for an extended period, the camera temperature rises. In this case, stop recording movies.

Camera overheating
Allow it to cool

- The camera temperature has risen. The power may turn off automatically, or you may be unable to record movies. Leave the camera in a cool location until the temperature goes down.

Internal memory error

- Turn the power off and then on again.

Error formatting internal memory

- Format the media again (page 57).

No images

- No images that can be played back have been recorded in the internal memory.

Folder error

- A folder with the same first three digit number already exists on the internal memory (for example: 123MSDCF and 123ABCDE). Format the camera (page 57).

Cannot create more folders

- The folder with a name beginning with “999” exists on the internal memory. Format the camera (page 57).

File error

- An error occurred while the image was playing back.
  Playback on the camera cannot be guaranteed if files contain images processed on a computer, or images shot by another camera.

Image size over limit

- You are playing back an image with size that cannot be played back on the camera.

Maximum number of images already selected

- Up to 100 files can be selected when using [Delete] and [Share].

Operation cannot be executed in unsupported files

- Playback zoom cannot be performed on movies.

Invalid operation

- This message appears if you perform an invalid operation.

The upload place deleted

- The upload destination, such as an album, is not found. Make sure that the correct destination is specified for the service.

Connection error

- An error has occurred during Wi-Fi connection. Re-establish the Wi-Fi connection.

There is not enough usable space on the server

- There is not enough available capacity on the destination server for the content you wish to upload.

Internal error occurred

- Turn the power off and then on again.

Network error

- Reconnect the network service.

Login failed

- Logging in to the network service failed. Login to the network service again.

Number of still images and recordable time of movies

The number of still images and recordable time may vary depending on the shooting conditions.

Still images

(Units: Images)

Size	Capacity
12M	1276
8M	1723
2M	7221

Notes

- When the number of remaining recordable images is greater than 9,999, the ">9999" indicator appears.
- When images recorded using other cameras are played back on this camera, the display may differ from the actual image size.
- When measuring media capacity, 1 GB equals 1 billion bytes, a portion of which is used for data management.

Movies

The table below shows the approximate maximum recording times. These are the total times for all movie files. Continuous shooting is possible for approximately 29 minutes.

(Units: hour : minute : second)

Size	Capacity
1080/30P	75 min [1:15] (47 min [0:47])
720/60P	135 min [2:15] (82 min [1:22])
720/30P	190 min [3:10] (104 min [1:44])

Notes

- Your camera uses the VBR (Variable Bit Rate) format to automatically adjust image quality to suit the recording scene. This technology causes fluctuations in the recording time of the internal memory. Movies containing quickly moving and complex images are recorded at a higher bit rate, and this reduces the overall recording time.
- The maximum size of a single movie file is approximately 2 GB. Recording stops before 29 minutes if the file size reaches approximately 2 GB during movie recording.
- The number in ( ) is the minimum recording time.
- When the possible continuous shooting time ends, the recording stops automatically.

Built-in battery pack

On charging the battery pack

- We recommend charging the battery pack in an ambient temperature of between 10°C to 30°C (50°F to 86°F). The battery pack may not be effectively charged in temperatures outside this range.
- When usable battery life becomes half the usual time, even after charging the battery fully, the battery may need to be replaced. Consult your nearest Sony dealer.

Effective use of the battery pack

- Battery performance decreases in low temperature surroundings. So in cold places, the operational time of the battery pack is shorter.
- The battery pack will run out quickly if you use the zoom frequently.
- Do not expose the camera to water. The camera is not water-resistant.
- Do not leave the camera in an extremely hot place, such as in a car or under direct sunlight.

How to store the camera

- Even if you do not use the camera for an extended period, fully charge the camera every 6 to 12 months to maintain the camera's function. Also, store the camera in a cool, dry place.

On battery life

- The battery life is limited. Battery capacity decreases over time and through repeated use. If decreased usage time between charges becomes significant, consult your nearest Sony dealer.
- The battery life varies according to how it is stored and the operating conditions and environment in which each battery pack is used.

Precautions

Do not use/store the camera in the following places

- In an extremely hot, cold or humid place
  In places such as in a car parked in the sun, the camera body may become deformed and this may cause a malfunction.
- Under direct sunlight or near a heater
  The camera body may become discolored or deformed, and this may cause a malfunction.
- In a location subject to rocking vibration
- Near strong magnetic fields
- In sandy or dusty places
  Be careful not to let sand or dust get into the camera. This may cause the camera to malfunction, and in some cases may be irreparable.

On carrying

Do not sit down in a chair or other place with the camera in the back pocket of your trousers or skirt, as this may cause malfunction or damage the camera.

On cleaning

Cleaning the lens

Wipe the lens with a soft cloth to remove fingerprints, dust, etc.

Cleaning the camera surface

Clean the camera surface with a soft cloth slightly moistened with water, then wipe the surface with a dry cloth. Do not do any of the following as they may damage the finish or the casing.

– Use Chemical products such as thinner, benzine, alcohol, disposable cloths, insect repellent, sunscreen or insecticide, etc.
– Touch the camera with any of the above on your hand.
– Leave the camera in contact with rubber or vinyl for a long time.

On operating temperatures

Your camera is designed for use under the temperatures between 0°C and 40°C (32°F and 104°F). Shooting in extremely cold or hot places that exceed this range is not recommended.

On moisture condensation

If the camera is brought directly from a cold to a warm location, moisture may condense inside or outside the camera. This moisture condensation may cause a malfunction of the camera.

If moisture condensation occurs

Turn off the camera and wait about an hour for the moisture to evaporate.

Note on disposal/transfer

- When using the software pre-loaded on the internal memory, personal information such as IDs and mail addresses may be saved on the internal memory of the camera. Before changing ownership of the camera, or before disposal, delete any personal information.
- Even if you delete data in the internal memory or format the camera, you may not delete data from the internal memory completely.
- To prevent the camera from restoring the internal memory data, record any unnecessary data on the internal memory of the camera.

The software (including, updated software) that installed into this product (“SONY SOFTWARE”) has, among others, certain functionality defined below (“Network Linkage Function”). Your use of Network Linkage Function shall constitute your agreement to the following terms and conditions.

“Network Linkage Function”: Certain function of connecting, linking, working your audio-visual data in this product with certain websites which offer services linking your data (the “Website”)

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– You shall use the services offered by the Website at your sole risk and responsibility and in compliance with the terms and conditions of service at such Website.
– Any Website may, at its sole discretion, cease or change the operation of such Website. SONY and Licensors shall NOT be liable for any loss or damages of you and third parties, whether direct, incidental, consequential or otherwise, arising out of or relating to the use or inability to use the services provided by such Website due to its cessation or change of the operation.
– When you access to a Website using Network Linkage Function, your data may be transferred to such Website through the servers administered by or for SONY (the “SONY Servers”). You acknowledge and agree that (i) there may be time period in which you may not be able to access to any Website using Network Linkage Function for any reason (including the server maintenance of SONY Servers); and that (ii) when you access to Website through the SONY Servers the SONY Servers will record certain non-personally identifiable data, such as the number of times the SONY SOFTWARE accesses a particular Website URL, but at no time will the SONY SOFTWARE allow the SONY Servers record any personal information which may identify you; and that (iii) SONY will use such access count records only for the purpose of designing, developing, improving, offering, selling and rendering SONY group products and services.
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– If the use of services provided by certain Website is prohibited or limited by the applicable laws and regulations of certain countries, you shall comply with such laws and regulations. In order to comply with such laws and regulations, SONY may take the steps to prevent or limit the use of such services the access to such Website by using Network Linkage Function. SONY and Licensors shall NOT be liable for any loss or damages of you and third parties, whether direct, incidental, consequential or otherwise arising out of or relating to the use or inability to use the services provided by the Website due to such steps taken by SONY.

Specifications

Camera

[System]

Image device: 7.35 mm (1/2.5 type) CMOS sensor
Total pixel number of camera:
Approx. 13.0 Megapixels
Effective pixel number of camera:
Approx. 8.3 Megapixels (still image, 16:9),
Approx. 12.8 Megapixels (still image, 4:3),
Approx. 2.1 Megapixels ([1920×1080 30p] movie)
Lens: F2.8
f = 5.3 mm (7/32 inches)
When converted to a 35 mm still camera
For movies: 37 mm (1 1/2 inches) (16:9)
For still images: 32 mm (1 5/16 inches) (4:3)
Exposure control: Automatic exposure
File format:
Still images: JPEG (DCF Ver. 2.0, Exif Ver. 2.3, MPF Baseline) compliant
Movies: MPEG-4 AVC/H.264 (MP4)
Audio: MPEG AAC
Recording media: Internal Memory (approx. 8 GB)

- When measuring media capacity, 1 GB equals 1 billion bytes, a portion of which is used for system management and/or application files. Available user capacity is approximately 7.6 GB.

[Input and Output connectors]

HDMI OUT jack: HDMI mini connector
Built-in USB arm: type A (built-in)
USB communication: Hi-Speed USB (USB 2.0 compliant)

[LCD screen]

LCD screen: 7.6 cm (3.0 type) TFT drive
Total number of dots: 288 000 (720 × 400) dots

[Power, general]

Power:
Built-in rechargeable battery pack
USB charging
Charging time: Approx. 330 mins. (when charging from the USB connector of the computer)
Approx. 150 mins. (when charging from the AC-UD20 USB charger (sold separately))
Power consumption (during shooting): 2.1 W
(when the movie image size is [1280×720 30p])
Wireless LAN: OFF
Operating temperature: 0°C to 40°C (32°F to 104°F)
Storage temperature: –20°C to +60°C (–4°F to +140°F)
Dimensions: Approx. 54.8 mm × 113.0 mm × 15.5 mm (2 1/4 inches × 4 1/2 inches × 5/8 inches) (W/H/D)
Mass: Approx. 137 g (4.8 oz)
Microphone: Stereo
Speaker: Monaural

[Wireless LAN]

Standards: IEEE802.11b/g/n compliant

Design and specifications are subject to change without notice.

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“Works with PlayStation 3” indicates that the product provides further enjoyment through your PlayStation 3 by use of specific application software.
The application software for this product to be used on PlayStation 3 is only accessible in the countries where PlayStation Store is available.

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On GNU GPL/LGPL applied software

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This informs you that you have a right to have access to, modify, and redistribute source code for these software programs under the conditions of the supplied GPL/LGPL. Source code is provided on the web. Use the following URL to download it. When downloading the source code, select MHS-TS55 as the model for your camera.
http://www.sony.net/Products/Linux/
We would prefer you do not contact us about the contents of source code.
Read “license.txt” in the “LICENSE” folder on the internal memory (Double-click [Computer] (in Windows XP, [My Computer]) → [START]). You will find licenses (in English) of “GPL,” and “LGPL” software.

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